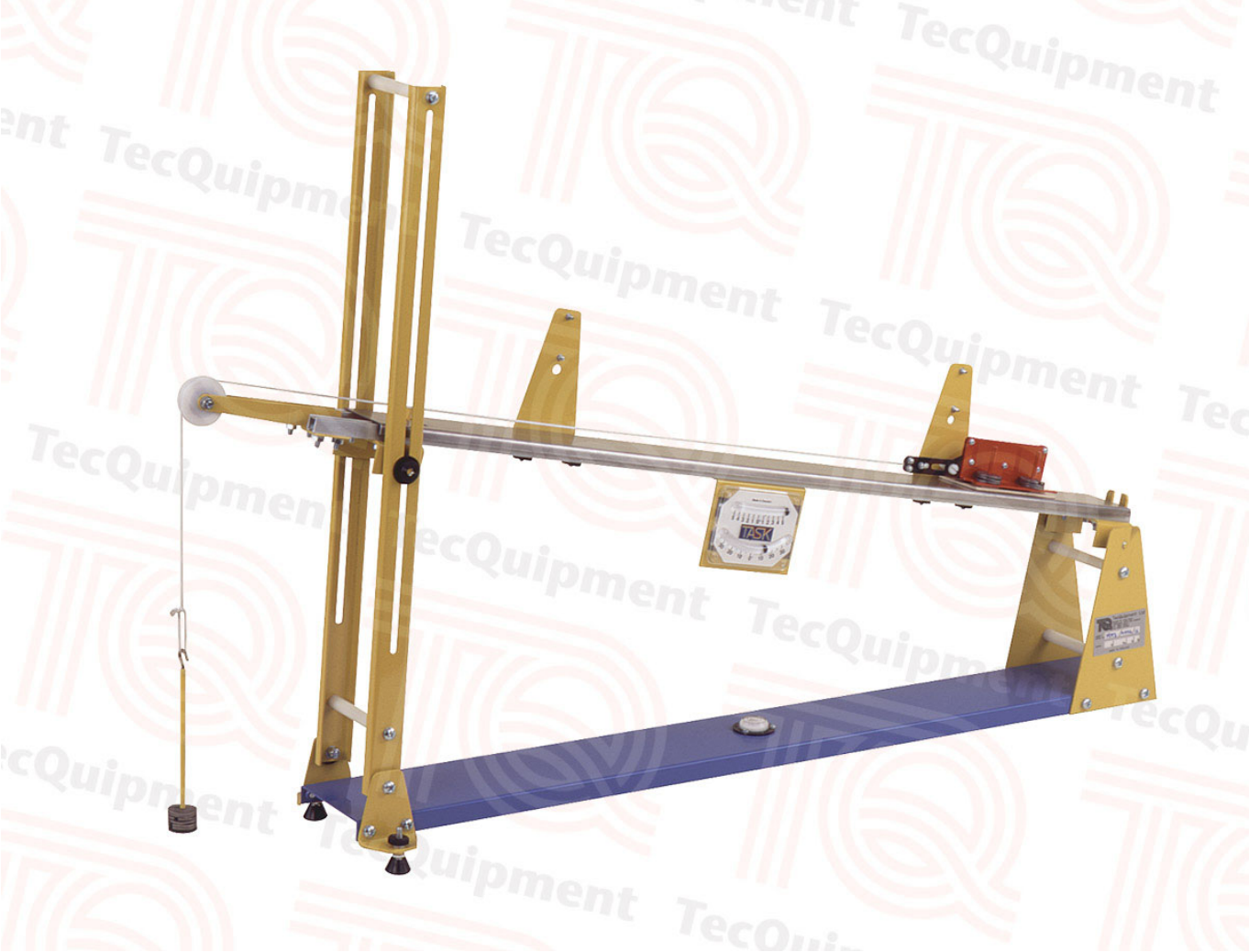
MM3

Inclined Plane Kit

For study of coefficient of friction, acceleration of a body and mechanical advantage



- Ideal for classroom demonstrations and for use by small groups of students
- Works with the additional Light Gates to show students how the angle of an incline affects acceleration
- Shows students how to find the coefficient of friction between materials
- Colour-coded parts to help students understand what each part does
- Supports all teaching levels up to and including first year university courses
- Hands-on equipment – easy-to-assemble parts allow students to build the experiments for improved understanding of the experiment

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TecQuipment

MM3

TASK Inclined Plane Kit

Description

A kit that builds into an adjustable-inclined plane held on a rigid frame. The equipment works in two ways:

- With rails to guide a simple wheeled trolley.
- With a stainless steel surface on which a friction skate travels along.

A clinometer (slope measuring instrument) shows the angle of inclination of the plane. Light gates (DH2), a data logger and computer software (DH1, available separately) measure velocity, time and acceleration.

For acceleration experiments, students measure the acceleration of a trolley as it rolls down the plane at different angles of incline.

For friction experiments, students find the coefficient of friction of a wooden or PVC plate against stainless steel. The wooden or PVC plate attaches to the skate, which travels over a stainless steel surface. Students use a cord, pulley and weights to pull the skate. They adjust the angle of incline of the plane until the skate starts to slide.

Students work individually or in groups of up to three. The colour of parts indicates their function. For example, yellow parts are mainly stationary or passive, and white parts are instrumentation. Red parts may move or contain energy.

The kit comes with assembly instructions. A teacher guide provides experiment methods, information, references and tips. A student workbook guides students through experiments.

Standard Features

- Supplied with comprehensive user guides (assembly instructions, student workbook and teacher guide)
- Two-year warranty
- Manufactured in accordance with the latest European Union directives

Essential Ancillaries

- Datalogger and Software (DH1)

A unit that connects the optional Light Gates (DH2) to a computer (not supplied) and software (supplied) to automatically find velocity and acceleration.

- 2 Light Gates (2 x DH2)

Photo-electric sensors with lights. Two light gates can fit around the inclined plane so that the moving trolley cuts a light path. They connect to the data logger (DH1).

- Computer (not supplied by TecQuipment)
- Weight Set (WT)

Experiments

Covers many classic 'text book' problems including:

- Relationship between acceleration and angle of incline
- Friction
- Coefficient of friction
- Forces at angles
- Equilibrium

Operating Conditions

Operating environment:
Laboratory environment

Storage temperature range:
–25°C to +55°C (when packed for transport)

Operating temperature range:
+5°C to +40°C

Operating relative humidity range:
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

Specifications

Packed dimensions and weight: 0.023 m^3 and 7.32 kg

Main parts:

- Frame, supports, friction plane and rails
- Skate assembly, trolley assembly
- Magnetic clinometer, bubble level
- PVC friction plate, wooden friction plate
- Timer plates, cord, pulley, weight hangers
- Nuts, bolts, washers, spacers and fixings

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